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THE CHESAPEAKE BAY SOFT CRAB INDUSTRY

By Prentiss W. Evans 1/

During June a visitor to New York's Fulton Market, Philadelphia's Dock Street Market, or Baltimore's Public Market will observe hundreds of boxes of soft-shell crabs being sold daily, because, while the soft crab season extends from April to November, it is usually during this month, climaxing about the Fourth of July, that soft-shell crabs are most popular as a seafood and command the highest prices. The soft crab that the visitor sees sold in these and other seafood markets is the blue crab, Callinectes sapidus, which, while known from Cape Cod to Texas, is especially important in the Chesapeake Bay area on the Atlantic Coast where a large industry is conducted in the catching and marketing of this delicious crustacean.

Historically, the soft crab of the Chesapeake Bay has been on the market as a seafood for a comparatively short period of time for it was as late as 1873 when the first shipment of soft crabs to market was made by Captain John H. Landon of Crisfield, Maryland, to the firm of John Martin of Philadelphia. The hard crab industry, based on the picking and marketing of fresh-cooked crab meat for food, was not begun until five years later when a plant was opened in Hampton, Virginia, for the picking of crab meat.

Considerable difficulty was at first experienced in developing a market for soft crabs since in earlier years they were believed to be poisonous. However, express agents and railroad employees whose daily runs took them through Crisfield became familiar with the edible qualities of soft crabs and succeeded in arousing the interest of fish and game dealers in larger cities, such as Baltimore, Philadelphia, and New York, in the sales possibilities of this crustacean. From this meager beginning some seventy years ago, this fishery has developed to the point where the catch in the Chesapeake Bay area in 1942 amounted to over 12 million peeler and soft crabs. Originally begun in the Chesapeake Bay tidewater country, this fishery is now commercially prosecuted from Cape Cod to Texas. At the peak of the season at Crisfield alone, the point where the fishery originated and which continues to be the center of the soft crab industry of the world, as many as 8 express carloads, or approximately 288,000 soft crabs, have been shipped in a single day. Starting with a strictly local market, soft crabs now are being shipped to practically every State in the Union and to many of the

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Provinces of Canada. They have left Crisfield for destinations on the other side of the Atlantic, and shipments have been made direct to Buckingham Palace in London.

Contrary to a belief held by many unfamiliar with the fishery, hard and soft crabs from Chesapeake Bay are the same species. Hard crabs become soft at intervals until fully grown. This occurs through the "molting" or "shedding" of the hard outer shell. It is only by shedding that crabs grow. With each shedding the crab becomes approximately one-third larger. Fertilization of the female by the hard male crab, also known as the "Jimmie" or "Chandler" crab, takes place while the female is in the soft-crab state.

The blue crab's favorite habitat is in rivers and shallow streams where marine vegetation is abundant. While the crab is to be found normally in salt water, it is more common in waters only slightly brackish. Only a small amount, less than 20 percent of the soft crabs that are marketed, are caught while soft; the remainder are taken when they are hard "peelers" or "shedders". A peeler or shedder crab is easily distinguished by the "crabber" or fisherman through a small faint pink line which encircles the outer edge of its back fin. As the peeler becomes riper, that is to say, as it approaches the stage wherein it will shed its hard outer shell and become soft, this faint pink line turns slowly red. After the line has become red, the peeler usually will shed within a few hours (normally at the beginning of the first subsequent flood tide), or at least within 24 hours unless unusually cool weather occurs.

While at the inception of the crab fishery peeler and soft crabs were taken by haul seines, at the present time this type of gear is relatively of little importance and the bulk of the catch is now taken by dip nets, scrapes, trot lines, pots, or by hand.

A dip net consists of a one-fourth inch iron rod bent in the form of a hoop about one foot in diameter to which is attached a cotton-net bag with mesh about one inch square. A wooden handle 8 to 12 feet long is attached to the iron hoop. The fisherman stands on the bow of his crabbing skiff, a boat about 14 feet long, and, upon seeing the crab, drops the dip net into the water and scoops the peeler or soft crab from the bottom. Considerable agility and skill as well as exceptional eyesight is required in the catching of crabs by this method because the crabs, upon the approach of the crabber, usually hurry away with considerable speed or bury themselves in the mud or grass, which is very protective inasmuch as the color of the bottom and grass closely resembles the color of the crustacean.
Dip nets are used primarily during the spring and early summer since it is then the crabs leave the cooler, deeper waters to shed in the warmer waters of the shallow streams. Quite often these streams are too shallow to float the netter's skiff so the fisherman abandons the skiff, tows a small live box or "tow-smack" which is fastened to his belt, and wades the stream with the dip net in hand. This form of crabbing is called "mud-larkin".

In deeper waters offshore or in shallow waters where the water is not clear and hence the bottoms are not visible, the crab scrape is the principal gear used. It is to be noted that during the middle and late summer, on account of the intense heat, the crabs leave the shallow waters of the "flats" for the cooler waters offshore. The crab scrape closely resembles the oyster dredge without its iron teeth and iron-mesh bag, a cotton-mesh bag being used. Scrapes, like oyster dredges, are drawn over the bottoms by vessels under sail power. After

dragging on the bottom from about 75 to 150 yards, the scrape is pulled by hand aboard the crabbing boat. The contents of the bag are then dumped into a culling box after which the scrape is thrown overboard for another haul. While the scrape is being dragged over a new course, the crabber culls his catch, the soft crabs and peelers being placed in separate boxes while the immature and unmarketable crabs are thrown overboard.

The trot line used to be the favorite gear used in warm weather for the catching of hard crabs. A trot line usually is 1,000 feet or more in length and is baited at intervals of about 5 feet with tripe, salted eels, etc. The crabs seize the bait, the line is pulled up to the boat over a spool, and the crabs still clinging to the bait are, by the use of a dip net, taken from the line. Many peelers and soft crabs are taken along with the hard crabs. Most of the soft crabs obtained with this gear are females from the pairs of mating crabs called "doublers". The male, carrying the female, seizes the bait and both are captured. The reason that peelers and soft crabs are ordinarily not caught separately by trot lines is the fact that crabs in or near the shedding state eat little if anything and hence do not grasp the baited trot line.

The crab pot has recently become the most used method of taking hard crabs. These pots are made of chicken wire and are generally in the shape of a cube, 2 feet on each side. The crabs enter the pot through 2 openings near the bottom. The pot is divided into 2 sections - the lower holding the bait, protected by wire, while the upper compartment is where the crabs eventually congregate.

Regardless of the gear used in catching the peeler crabs, the fisherman, immediately upon their capture, breaks their claws or "biters" before placing them in a box which is covered with moist seaweed called "sea-oars". The claws are broken to prevent the crabs from biting each other, which causes "bleeding" resulting in a high mortality.

The crabbers are in their craft as early as 2:00 A.M. and are on the crabbing grounds ready to begin work as soon as there is sufficient light to enable them to cull their catch. As a rule the best catches are made early in the morning and most of the crabbers quit work between 11 A.M. and noon.

In hot weather it is imperative that soft crabs be landed and placed under ice as quickly as possible. The peelers also must be quickly delivered to the shedding houses, since being out of the water for any considerable length of time in hot weather will result in a high percentage dying.

The fishing craft used by the crab fishermen are almost invariably of less than five net tons capacity. They are classified as canoes, skipjacks, and bateaux, and measure from 18 to 30 feet in length. For power they usually depend on sails carrying a mainsail and jib.

The daily catch of peelers and soft crabs by a crab fisherman will average from 100 to 300 crabs per day. However, the catch at times varies widely; for instance, one crabber at Crisfield during one week caught 18,000 peelers and soft crabs. At other times, however, the catch may only be from 6 to 20 crabs a day.

The crabbers seldom ship their own catches but sell them to regular dealers called packers. The buildings occupied by the packers are plain frame structures usually built on pilings over the water and ordinarily consist of one room. Two

to 6 men form the personnel of each packing firm, the number varying according to the season and amount of business transacted. After the packer buys the catch from the crabbers, the soft crabs are packed for immediate shipment and the peelers are placed in floats. The floats cost about $4.00 each and are made of light planks with plain board bottoms and latticed sides. Here the crabs are kept until the shedding process is over. Before the peelers are placed in the crab floats each one is carefully examined by the dealer to determine its nearness to the shedding stage. All crabs in the same stage are placed together in one float. This segregation is mandatory inasmuch as it has been found that crabs which are not approacing the shedding state, when kept with soft crabs, will eat the latter.

The floats containing the peeler crabs are visited several times each day and night, being watched and "fished" particularly on the flood tide as it has been learned that the majority of the peelers shed at this time. The peelers that have molted or shed their hard outer shells and are now soft crabs are not immediately taken from the floats after shedding because they are too weak and soft for shipment. However, about two or three hours after shedding they become stiffer and feel "rubbery" to the touch. When this rubbery condition is reached the crab is in good condition for shipment. Only experienced men are permitted to fish the floats since soft crabs that are overlooked in the "fishing up" and are left for more than six or eight hours in the floats after shedding become hard crabs again. These overlooked crabs that have become partially hard are called "buckram" crabs. Buckram crabs are a total loss to the dealer inasmuch as they cannot be sold for soft crabs nor may they be cooked and picked for crab meat because they are too "watery".

After the soft crabs are removed from the floats, they are graded according to size and packed. The smallest crabs packed in Chesapeake Bay, about 3 1/2 inches in length from tip to tip - the legal minimum size, are called culls. "Buffalo" crabs, that is, crabs which have lost their claws and legs in shedding or otherwise are also sold as culls. Other grades are mediums (3-3/4"-4"), hotel primes (4"-5"), primes (5"-6"), and jumbos (6"+).

The crates called "trunks", used for packing soft crabs, are 20-, 30-, 40-, 60-, and 80-pound boxes. The crates are provided with two neatly fitting trays. About 15 dozen prime soft crabs are packed in an 80-pound box; 10 dozen jumbos or 20 dozen mediums may also be packed in this size trunk. Soft crabs have but little tendency to move, and when once placed in position with their legs well folded up and their bodies placed obliquely they remain quiet for a long time. Another reason for packing them in this position is so the moisture will not run from their mouths. The crabs are placed between two layers of seaweed, on the bottom of the trunk and in the two trays. A piece of parchment paper is fitted on top of the crabs to keep the seaweed from mingling with and detracting from their appearance. The paper and the seaweed may easily be rolled back so that the prospective customer may inspect the crabs. After packing, each tray is given a slight sprinkling of finely crushed ice to "temper" the crabs. Before shipment they are re-iced with a heavy sprinkling of crushed ice. Soft crabs have been kept in moderately cool summer weather for as long as 8 days before shipment without serious mortality.

Since soft crabs are highly perishable the majority of them are transported to market by either motor-trucks or express. In addition to these carriers a small percentage is carried by steamer. If the haul is for a considerable distance refrigerator cars and trucks are used. In this connection the carrying compartments should be kept sealed at all times since excess air circulation rapidly melts the ice and dries out the crabs, causing them to die in large numbers. Only live soft crabs are shipped to market and, as the visitor in our terminal markets will note, the percentage of crabs reaching their destination alive is very high except in unusually hot weather.

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